



## **SR6 - Sirius Receiver/ High Speed Network Switch**

Installation Guide

# **Raymarine®**



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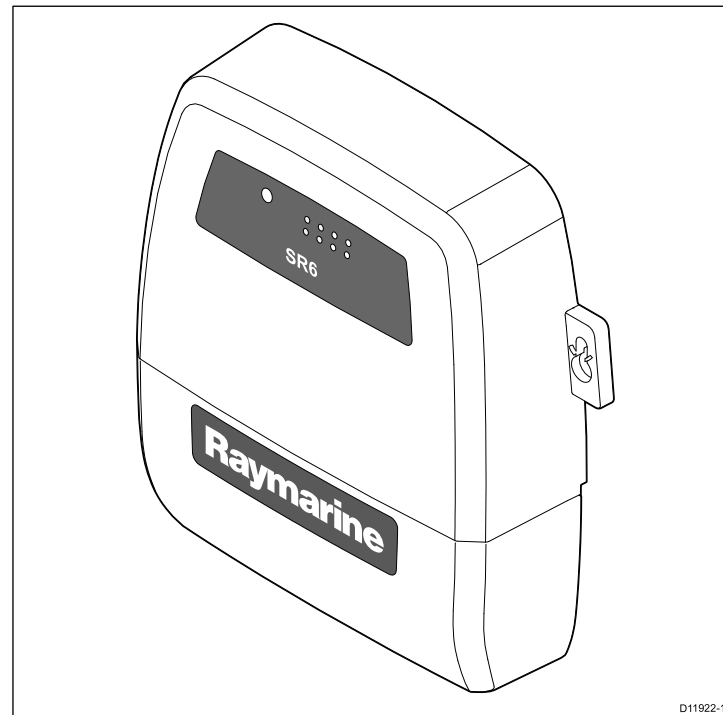
# Chapter 1: Introduction

## Handbook information

This guide provides information for installation of your Raymarine SR6 Sirius receiver and network hub.

## SR6 Receiver

The Raymarine SR6 is a combined 6 port SeaTalk<sup>hs</sup> hub and Sirius weather / audio service receiver.



The key functions of the SR6 are:

- Sirius satellite service receiver compatible with Sirius Marine Weather and audio services.
- Six port SeaTalk<sup>hs</sup> hub for networking of compatible Raymarine products.

## SeaTalk<sup>hs</sup>

SeaTalk<sup>hs</sup> is an ethernet based marine network. This high speed protocol allows compatible equipment to communicate rapidly and share large amounts of data.

Information shared using the SeaTalk<sup>hs</sup> network includes:

- Shared cartography (between compatible displays).
- Digital radar data.
- Sonar data.

## Important information



### Warning: Product installation and operation

This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, damage to your boat and/or poor product performance.



### Warning: Switch off power supply

Ensure the boat's power supply is switched OFF before starting to install this product. Do NOT connect or disconnect equipment with the power switched on, unless instructed in this document.



### Warning: Potential ignition source

This product is NOT approved for use in hazardous/flammable atmospheres. Do NOT install in a hazardous/flammable atmosphere (such as in an engine room or near fuel tanks).



### Warning: Product grounding

Before applying power to this product, ensure it has been correctly grounded, in accordance with the instructions in this guide.

### Caution: Power supply protection

When installing this product ensure the power source is adequately protected by means of a suitably-rated fuse or automatic circuit breaker.

### Caution: Service and maintenance

This product contains no user serviceable components. Please refer all maintenance and repair to authorized Raymarine dealers. Unauthorized repair may affect your warranty.

## Sirius weather disclaimer

The weather information is subject to service interruptions and may contain errors or inaccuracies and consequently should not be relied upon exclusively. You are urged to check alternate weather information sources prior to making safety related decisions. You acknowledge and agree that you shall be solely responsible for use of the information and all decisions taken with respect thereto. By using this service, you release and waive any claims against Sirius Satellite Radio Inc., WSI, Navcast Incorporated, and Raymarine with regard to this service.

If you do not have the subscription agreement, you may view a copy on the internet at [www.sirius.com/marineweather](http://www.sirius.com/marineweather)



## IMO and SOLAS

The equipment described within this document is intended for use on leisure marine boats and workboats not covered by International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) Carriage Regulations.

## EMC installation guidelines

Raymarine equipment and accessories conform to the appropriate Electromagnetic Compatibility (EMC) regulations, to minimize electromagnetic interference between equipment and minimize the effect such interference could have on the performance of your system

Correct installation is required to ensure that EMC performance is not compromised.

For **optimum** EMC performance we recommend that wherever possible:

- Raymarine equipment and cables connected to it are:
  - At least 1 m (3 ft) from any equipment transmitting or cables carrying radio signals e.g. VHF radios, cables and antennas. In the case of SSB radios, the distance should be increased to 7 ft (2 m).
  - More than 2 m (7 ft) from the path of a radar beam. A radar beam can normally be assumed to spread 20 degrees above and below the radiating element.
- The product is supplied from a separate battery from that used for engine start. This is important to prevent erratic behavior and data loss which can occur if the engine start does not have a separate battery.
- Raymarine specified cables are used.
- Cables are not cut or extended, unless doing so is detailed in the installation manual.

**Note: Where constraints on the installation prevent any of the above recommendations**, always ensure the maximum possible separation between different items of electrical equipment, to provide the best conditions for EMC performance throughout the installation

## Suppression ferrites

Raymarine cables may be fitted with suppression ferrites. These are important for correct EMC performance. If a ferrite has to be removed for any purpose (e.g. installation or maintenance), it must be replaced in the original position before the product is used.

Use only ferrites of the correct type, supplied by Raymarine authorized dealers.

## Product disposal

Dispose of this product in accordance with the WEEE Directive.



■ The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some Raymarine products, we support its policy and ask you to be aware of how to dispose of this product.

## Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document.

## Cleaning

1. Switch off the power to the unit.
2. Wipe the unit with a clean, damp cloth.
3. If necessary, use isopropyl alcohol (IPA) or a mild detergent to remove grease marks.

**Note:** Do NOT use abrasive, or acid or ammonia based products.

## Warranty registration

To register your Raymarine product ownership, please take a few minutes to fill out the warranty registration card found in the box, or visit [www.raymarine.com](http://www.raymarine.com) and register on-line.

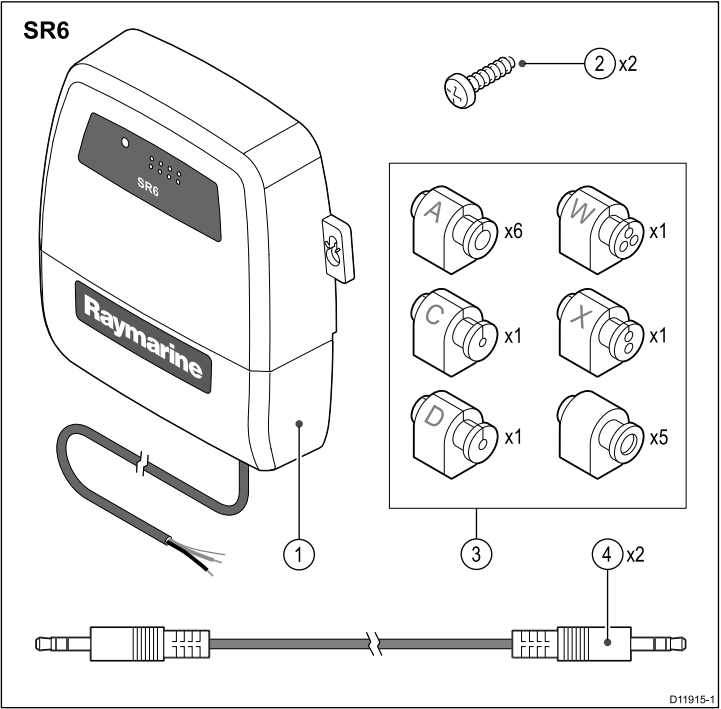
It is important that you register your product to receive full warranty benefits. Your unit package includes a bar code label indicating the serial number of the unit. You should stick this label to the warranty registration card.

# Chapter 2: Parts and accessories

## Chapter contents

- [2.1 Parts supplied on page 12](#)
- [2.2 Tools Required on page 13](#)

## 2.1 Parts supplied



1	SR6 Sirius receiver (with 2 m (6.6 ft) power cable attached)
2	2 x #10 stainless steel 3/4 inch self-tapping screws
3	16 x cable entry grommets (see separate table below)
4	2 x 2 m (6.6 ft) audio cable (terminated with 3.5 mm stereo jack plugs)

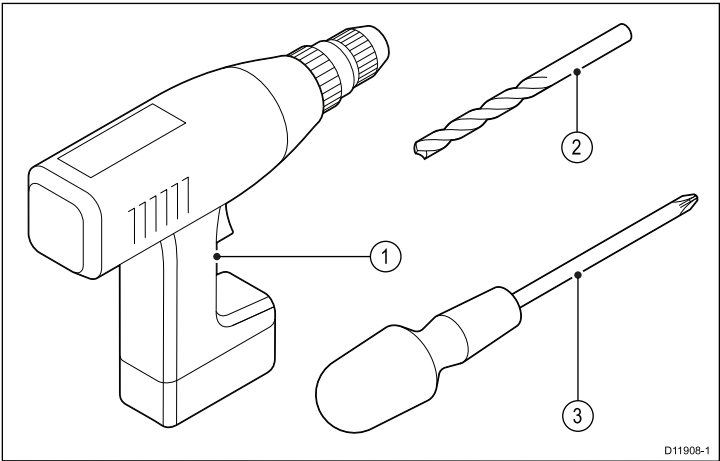
Each grommet is designed for a specific cable type:

Grommet ID (letter)	Description
B	1 x Power cable grommet (pre fitted)
A	6 x SeaTalk <sup>hs</sup> cable grommet.
D	1 x Antenna cable grommet
X	1 x Antenna cable plus one audio cable grommet.
W	1 x Antenna cable plus two audio cable grommet.
C	1 x Single Audio cable grommet
N/A	5 x Blank grommet, fitted when no cable is used.

### Additional parts required

- Sirius antenna. You will need to obtain a suitable antenna. The recommended antenna is the Shakespeare SRA-40.
- SeaTalk<sup>hs</sup> cable, required for connection to the Raymarine multifunction display.

# 2.2 Tools Required



1	Drill
2	7/64" Drill bit
3	Phillips screwdriver



# Chapter 3: Cables and connections

## Chapter contents

- [3.1 General cabling guidance on page 16](#)
- [3.2 Typical system on page 17](#)
- [3.3 SR6 hub — SeaTalk<sup>hs</sup> network on page 18](#)
- [3.4 SR6 connection overview on page 20](#)
- [3.5 Power connection on page 21](#)

## 3.1 General cabling guidance

### Cable types and length

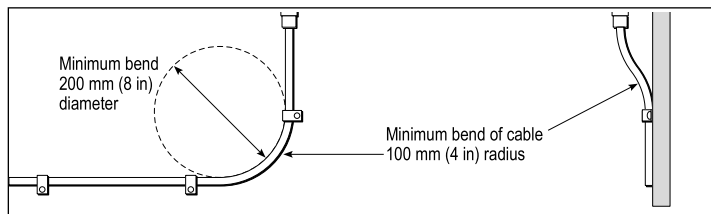
It is important to use cables of the appropriate type and length

- Unless otherwise stated use only standard cables of the correct type, supplied by Raymarine.
- Ensure that any non-Raymarine cables are of the correct quality and gauge. For example, longer power cable runs may require larger wire gauges to minimize voltage drop along the run.

### Routing cables

Cables must be routed correctly, to maximize performance and prolong cable life.

- Do NOT bend cables excessively. Wherever possible, ensure a minimum bend radius of 100 mm.



- Protect all cables from physical damage and exposure to heat. Use trunking or conduit where possible. Do NOT run cables through bilges or doorways, or close to moving or hot objects.
- Secure cables in place using tie-wraps or lacing twine. Coil any extra cable and tie it out of the way.
- Where a cable passes through an exposed bulkhead or deckhead, use a suitable watertight feed-through.
- Do NOT run cables near to engines or fluorescent lights.

Always route data cables as far away as possible from:

- other equipment and cables,
- high current carrying ac and dc power lines,
- antennae.

### Strain relief

Ensure adequate strain relief is provided. Protect connectors from strain and ensure they will not pull out under extreme sea conditions.

### Circuit isolation

Appropriate circuit isolation is required for installations using both AC and DC current:

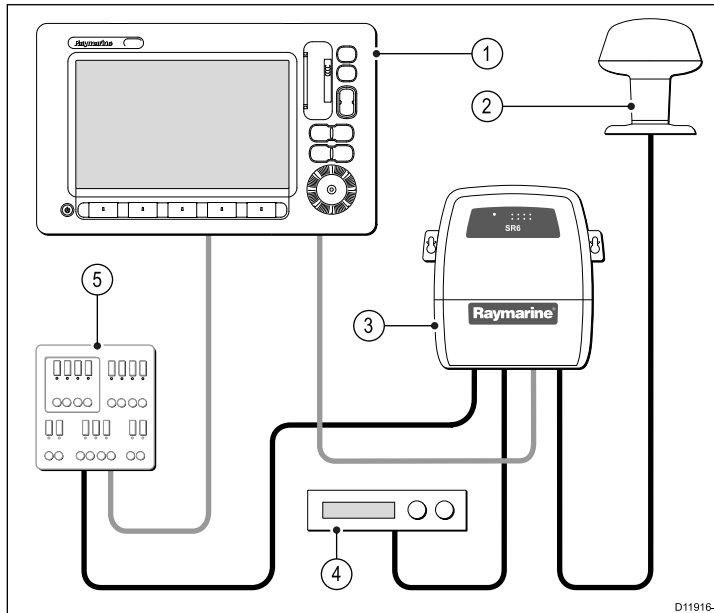
- Always use isolating transformers or a separate power-inverter to run PC's, processors, displays and other sensitive electronic instruments or devices.
- Always use an isolating transformer with Weather FAX audio cables.
- Always use an isolated power supply when using a 3rd party audio amplifier.
- Always use an RS232/NMEA converter with optical isolation on the signal lines.
- Always make sure that PC's or other sensitive electronic devices have a dedicated power circuit.

### Cable shielding

Ensure that all data cables are properly shielded that the cable shielding is intact (e.g. hasn't been scraped off by being squeezed through a tight area).



## 3.2 Typical system

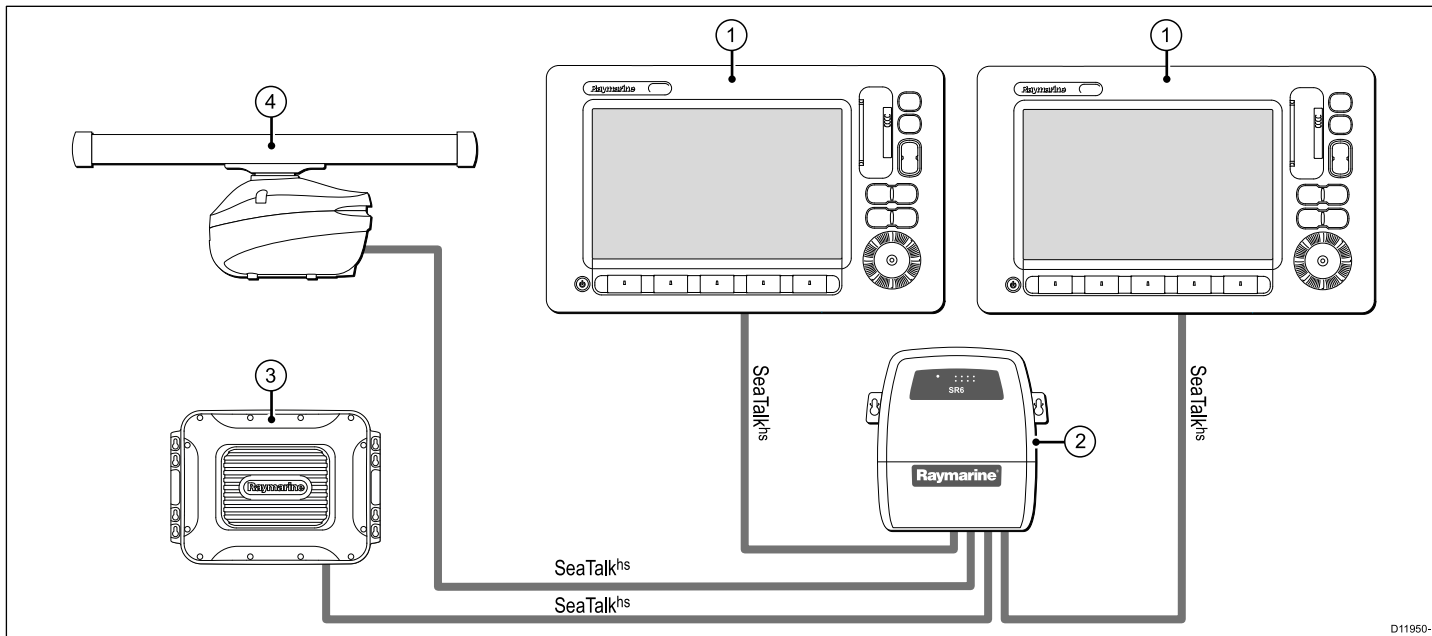


1	Compatible multifunction display. (Connected using SeaTalk <sup>hs</sup> )
2	Antenna (not supplied with the SR6)
3	SR6 Sirius Receiver
4	Ship's audio amplifier (Connected using the supplied audio cable)
5	Power Supply (Connected with the supplied flying lead)

### 3.3 SR6 hub — SeaTalk<sup>hs</sup> network

The SeaTalk<sup>hs</sup> network allows you to connect compatible displays and other digital devices.

#### Example SeaTalk<sup>hs</sup> network



1. Multifunction display
2. SeaTalk<sup>hs</sup> hub (e.g. SR6)
3. Digital sounder (DSM)
4. Digital radar scanner

- Use a SeaTalk<sup>hs</sup> network cables to connect the SR6 to your multifunction display. These have a waterproof connector at one end.

- Use SeaTalk<sup>hs</sup> patch cables for connections to equipment without a waterproof connector. (Refer to product documentation for details).

## SeaTalk<sup>hs</sup> network cables

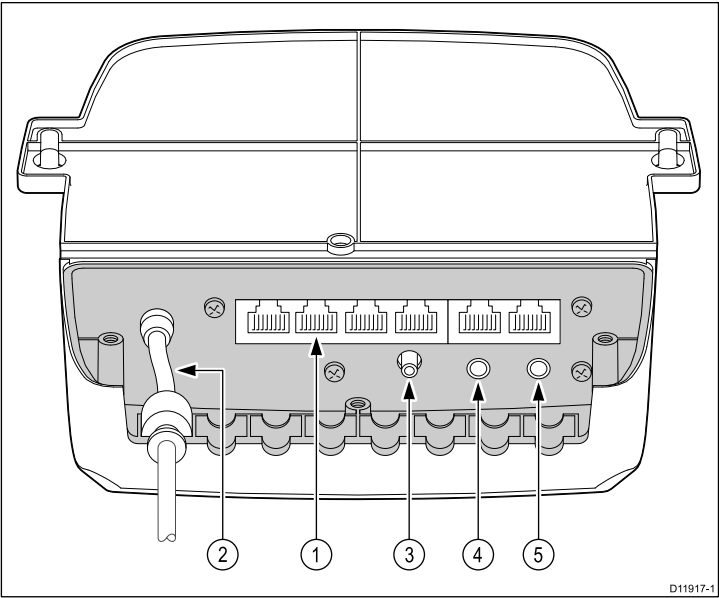
Cable	Part number
1.5 m (4.9 ft) SeaTalk <sup>hs</sup> network cable	E55049
5 m (16.4 ft) SeaTalk <sup>hs</sup> network cable	E55050
10 m (32.8 ft) SeaTalk <sup>hs</sup> network cable	E55051
20 m (65.6 ft) SeaTalk <sup>hs</sup> network cable	E55052

## SeaTalk<sup>hs</sup> patch cables

Cable	Part number
1.5 m (4.9 ft) SeaTalk <sup>hs</sup> patch cable	E06054
5 m (16.4 ft) SeaTalk <sup>hs</sup> patch cable	E06055
10 m (32.8 ft) SeaTalk <sup>hs</sup> patch cable	E06056
15 m (49.2 ft) SeaTalk <sup>hs</sup> patch cable	A62136
20 m (65.6 ft) SeaTalk <sup>hs</sup> patch cable	E06057

### 3.4 SR6 connection overview

The connectors are located by removing the bottom cover.



1	6 x SeaTalk <sup>hs</sup> network ports
2	Power cable (flying lead)
3	Antenna connector
4	Audio output 2, not currently used.
5	Audio output 1, output to your amplifier.

Connection care points:

- Connections can only be made with the unit unmounted. The bottom cover is secured with screws into the rear of the unit.
- Connections must be made through the appropriate grommets. When the bottom panel is replaced, the gap closes to provide a watertight seal.

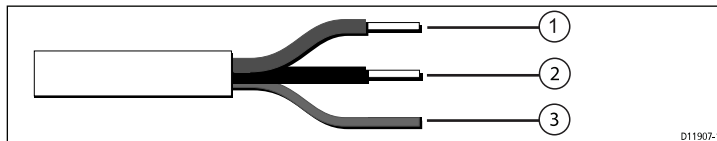
## 3.5 Power connection

The SR6 can be connected to a DC power supply of 12 or 24 V.

There is no power switch on the SR6 Sirius weather receiver, it automatically turns on when the system is powered.

The power connection for your system should be made at either the output of the battery isolator switch, or at a DC power distribution panel. The power must be fed directly to the system through its own dedicated cable system and **MUST** be protected by a thermal circuit breaker or fuse, installed close to the power connection.

A 2 m (6.6 ft) cable is hard-wired into the SR6 receiver for connection as follows:



1	Red	12/24 V Battery +ve
2	Black	0 V Battery -ve
3		Drain / ground

This cable may be extended to a distance of 20 m (60 ft) using suitable wire, gauge AWG 12 or greater.

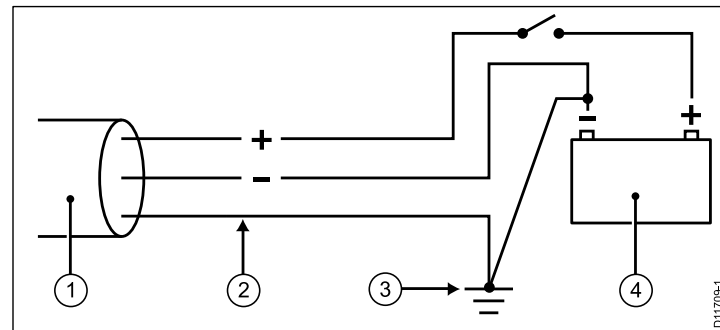
## Grounding requirements

These grounding requirements are applicable for Raymarine equipment supplied with a separate drain wire or screen.

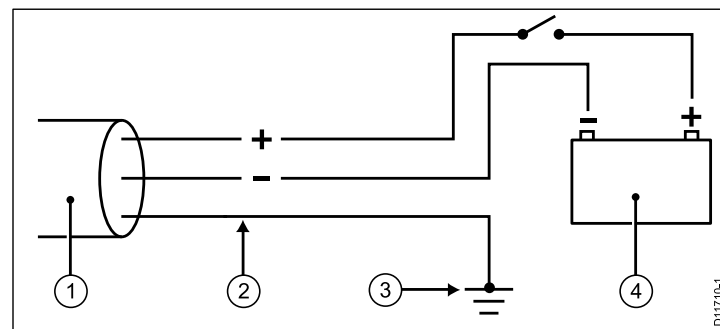
- The product power cable drain conductor (screen) must be connected to a common ground point.
- It is recommended that the common ground point is a bonded ground, i.e. with the ground point connected to battery negative, and situated as close as possible to the battery negative terminal.

If a bonded ground system is not possible, a non-bonded RF ground may be used.

### Bonded ground system (preferred)



### RF ground system (alternative)



1. Power cable to product.
2. Drain (screen).
3. Bonded (preferred) or non-bonded RF ground.
4. Power supply or battery.

## Implementation

If several items require grounding, they may first be connected to a single local point (e.g. within a switch panel), with this point connected via a single, appropriately-rated conductor, to the boat's common ground. The preferred minimum requirement for the path to ground (bonded or non-bonded) is via a flat tinned copper braid, with a 30 A rating (1/4 inch) or greater. If this is not possible, an equivalent stranded wire conductor maybe used, rated as follows:

- for runs of <1 m (3 ft), use 6 mm<sup>2</sup> (#10 AWG) or greater.
- for runs of >1 m (3 ft), use 8 mm<sup>2</sup> (#8 AWG) or greater.

In any grounding system, always keep the length of connecting braid or wires as short as possible.

**Important:** Do NOT connect this product to a positively-grounded power system.

## References

- ISO10133/13297
- BMEA code of practice
- NMEA 0400

# Chapter 4: Installation

## Chapter contents

- [4.1 Location requirement for Sirius receiver on page 24](#)
- [4.2 Installation procedure on page 24](#)
- [4.3 Activate the Sirius receiver on page 26](#)

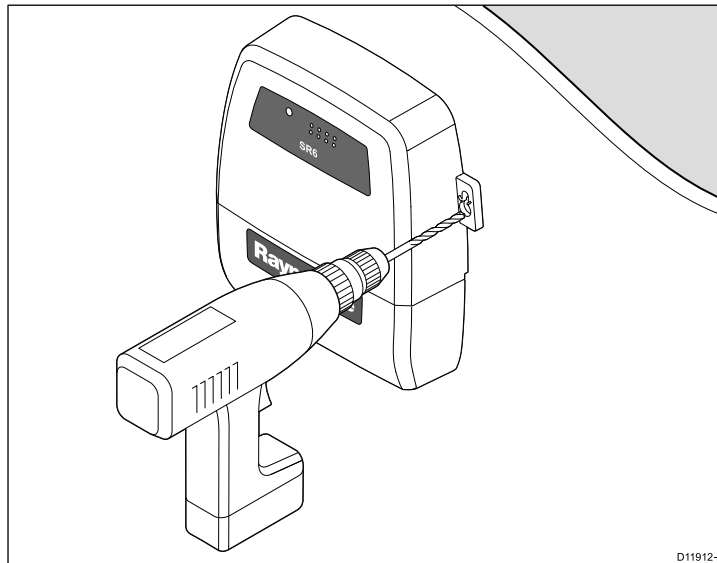
## 4.1 Location requirement for Sirius receiver

The installation location must take into account the following requirements:

- Install below decks in a dry area.
- Location must be at least 1 m (3 ft.) away from any magnetic compass.
- Safe from physical damage and excessive vibration.
- Away from any source of heat.
- Away from any potential flammable hazard, such as fuel vapors.
- Allow a minimum 30 cm (6 in) space below the unit to ensure adequate space for cable bends and connections.

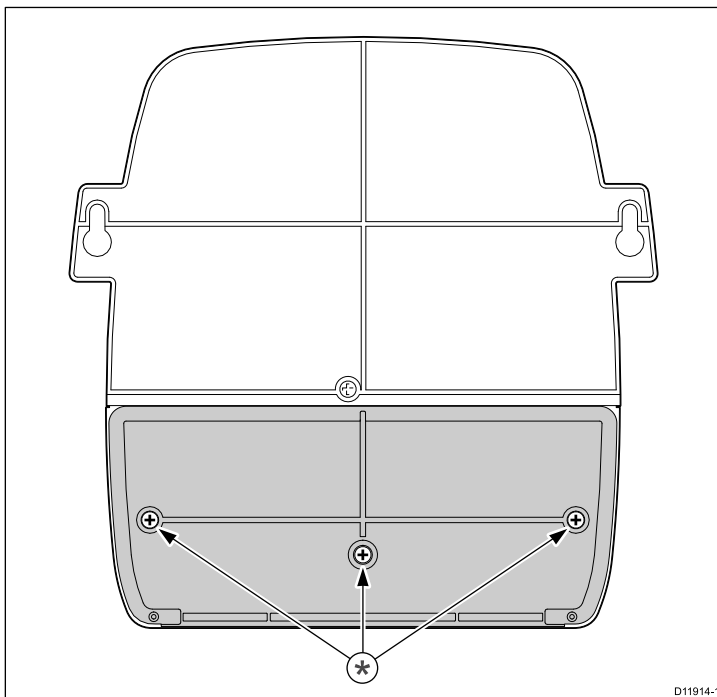
## 4.2 Installation procedure

1. Use a 7/64" drill bit to pilot holes for the mounting points.

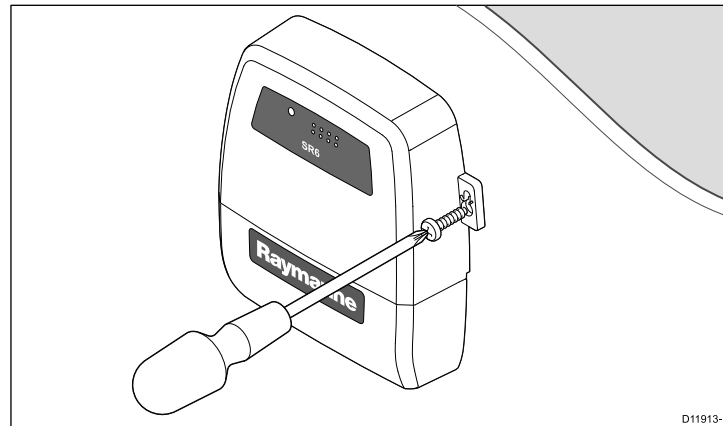


2. Remove the bottom cover. This is secured with 3 screws at the rear of the unit.





4. Connect the unit to the power supply using the hard wired lead.
5. Replace the bottom panel, taking care with the rubber seal, and replace the three screws.
6. Secure the SR6 unit in place using the 2 self tapping screws provided.



After installation you will need to activate your Sirius receiver for use with the Sirius subscription service.

3. Make the antenna, audio and SeaTalk<sup>hs</sup> cable connections into the unit. Pass the cables through the appropriate grommets.
  - Connect the audio and antenna cables first. These are below the network connectors and it is easier to connect the antenna and audio first.
  - Antenna and audio should be passed through the same grommet. (Use the 1 or 2 hole grommet depending upon the connections required).
  - Use a blanking grommet for any unused connections.

## 4.3 Activate the Sirius receiver

Before using the Sirius receiver you must activate it for your Sirius subscription.

You will need to contact Sirius and provide them with the ID associated with your unit. This can be found:

- on the carton in which the unit was packed,
- on your multifunction display, via the weather application setup menu.

Contact Sirius with this ID to activate your system.

### Sirius support

- **Sirius marine weather website:** [www.sirius.com/marineweather](http://www.sirius.com/marineweather)
- **Telephone:** 1–800–869–5480

# Chapter 5: Troubleshooting and support

## Chapter contents

- [5.1 Status LED on page 28](#)
- [5.2 Raymarine technical support on page 28](#)

## 5.1 Status LED

A 3 color LED provides the Satellite Receiver Status

LED status	Function
Flashing green	Normal operation
2X flashing amber	No display is connected for the Sirius output
3X flashing amber	No Sirius signal / Antenna disconnected
3X flashing red	Antenna short circuit fault
Other flashing red	Receiver failure

### Network LED

Each SeaTalk<sup>h</sup>s network port has an LED:

LED status	Function
Flashing	SeaTalk <sup>h</sup> s connected and communicating
Off	No cable connected or no current communication

## 5.2 Raymarine technical support

Raymarine provides a comprehensive customer support service, on the world wide web, through our worldwide dealer network and by telephone help line. If you are unable to resolve a problem, please use any of these facilities to obtain additional help.

### Web support

Please visit the customer support area of our website at:

[www.raymarine.com](http://www.raymarine.com)

This contains Frequently Asked Questions, servicing information, e-mail access to the Raymarine Technical Support Department and details of worldwide Raymarine agents.

### Telephone support

In the USA call:

+1 603 881 5200 extension 2444

In the UK, Europe, the Middle East, or Far East call:

+44 (0)23 9271 4713

### Product information

If you need to request service, please have the following information to hand:

- Product name.
- Product identity.
- Serial number.
- Software application version.

You can obtain this product information using the menus within your product.

## Appendix A Technical specification

Nominal supply voltage	12 or 24 Vdc
Operating voltage range	+9 to 32 Vdc
Power / Current	<ul style="list-style-type: none"><li>• Power: 8 W</li><li>• Typ. current: 0.62 A @ 12 V</li></ul>
Environmental	<p>Installation environment</p> <ul style="list-style-type: none"><li>• Operating temperature: –15 °C to 55 °C (5 °F to 131 °F)</li><li>• Storage temperature: – 35 °C to 85 °C (–31 °F to 185 °F)</li><li>• Relative humidity: max. 95%</li><li>• Water proof to IPX4</li></ul>
Connections	<ul style="list-style-type: none"><li>• 6 x SeaTalk<sup>hs</sup> ports</li><li>• Sirius audio out (line level)</li><li>• Sirius antenna input</li><li>• Power in</li></ul>
Dimensions	W 170 mm (6.7 in) x D 55 mm (2.2 in) x H 195 mm (7.7 in)
Weight	<ul style="list-style-type: none"><li>• 0.30 kg (0.66 lb), excluding pre-fitted power cable</li><li>• 0.70 kg (1.54 lb), including pre-fitted power cable</li></ul>





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